

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0099465

Owner: City of St. Clair  
Address: #1 Paul Parks Drive, St. Clair, MO 63077

Continuing Authority: Same as above  
Address: Same as above

Facility Name: St. Clair Wastewater Treatment Facility  
Facility Address: Highway N, St. Clair, MO 63077

Legal Description: SE ¼, SE ¼, SW ¼, Sec. 23, T42N, R1W, Franklin County

Receiving Stream: Unnamed Tributary to Happy Sock Creek (U)  
First Classified Stream and ID: Bourbeuse River (P)(02034)  
USGS Basin & Sub-watershed No.: (07140103-100001)  
is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

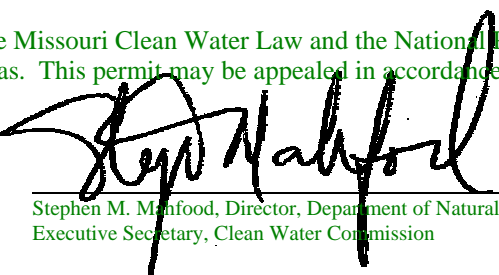
**FACILITY DESCRIPTION**

Outfall #001 - POTW - SIC #4952  
Lift station/two oxidation ditches/sludge press belt/sludge holding tank/sludge is land applied.  
Design population equivalent is 6,600.  
Actual flow is 0.66 MGD.  
Design flow is 1.06 MGD.  
Design sludge production is 81.6 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

July 28, 2000      April 5, 2002  
Effective Date      Revised

July 27, 2005  
Expiration Date  
MO 780-0041 (10-93)

  
Stephen M. Mahford, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

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Interim Director of Staff, Clean Water Commission

|  |       |                            |                   |                    | PAGE NUMBER 2 of 8       |                     |
|--|-------|----------------------------|-------------------|--------------------|--------------------------|---------------------|
| <b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>   |       |                            |                   |                    | PERMIT NUMBER MO-0099465 |                     |
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below: |       |                            |                   |                    |                          |                     |
| OUTFALL NUMBER AND EFFLUENT<br>PARAMETER(S)  | UNITS | FINAL EFFLUENT LIMITATIONS |                   |                    | MONITORING REQUIREMENTS  |                     |
|  |       | DAILY<br>MAXIMUM           | WEEKLY<br>AVERAGE | MONTHLY<br>AVERAGE | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE      |
| <u>Outfall #001</u>  |       |                            |                   |                    |                          |                     |
| Flow   | MGD   | *                          |                   |                    | once/weekday**           | 24 hr.<br>total     |
| Biochemical Oxygen Demand <sub>5</sub> ***   | mg/L  |                            | 45                | 30                 | once/month               | 24 hr.<br>composite |
| Total Suspended Solids***  | mg/L  |                            | 45                | 30                 | once/month               | 24 hr.<br>composite |
| Phosphorus, Total  | mg/L  | *                          |                   | *                  | once/month               | grab                |
| pH - Units   | SU    | ****                       |                   | ****               | once/month               | grab                |
| Ammonia as N   | mg/L  | *                          |                   | *                  | once/month               | grab                |
| Oil and Grease   | mg/L  | 15                         |                   | 10                 | once/month               | grab                |
| Cadmium, Total Recoverable   | µg/L  | 36                         |                   | *                  | once/quarter*****        | grab                |
| Cyanide, Amenable to Chlorination  | µg/L  | 22                         |                   | *                  | once/quarter*****        | grab                |
| Chromium, Dissolved  | µg/L  | *                          |                   | *                  | once/quarter*****        | grab                |
| Chromium, Total Recoverable  | µg/L  | 62                         |                   | *                  | once/quarter*****        | grab                |
| Copper, Total Recoverable  | µg/L  | 43                         |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Lead, Dissolved  | µg/L  | *                          |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Nickel, Total Recoverable  | µg/L  | 1500                       |                   |                    | once/quarter*****        | 24 hr.<br>composite |
| Lead, Total Recoverable  | µg/L  | 48                         |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Arsenic, Total Recoverable   | µg/L  | 60                         |                   |                    | once/quarter*****        | 24 hr.<br>composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2002</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.  |       |                            |                   |                    |                          |                     |
| <b>B. STANDARD CONDITIONS</b>  |       |                            |                   |                    |                          |                     |
| IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS <u>THOUGH FULLY SET FORTH HEREIN.</u>   |       |                            |                   |                    |                          |                     |

|  |            |                            |                   |                    | PAGE NUMBER 3 of 8       |                     |
|--|------------|----------------------------|-------------------|--------------------|--------------------------|---------------------|
| <b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>   |            |                            |                   |                    | PERMIT NUMBER MO-0099465 |                     |
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| OUTFALL NUMBER AND EFFLUENT<br>PARAMETER(S)  | UNITS      | FINAL EFFLUENT LIMITATIONS |                   |                    | MONITORING REQUIREMENTS  |                     |
|  |            | DAILY<br>MAXIMUM           | WEEKLY<br>AVERAGE | MONTHLY<br>AVERAGE | MEASUREMENT<br>FREQUENCY | SAMPLE<br>TYPE      |
| <u>Outfall #001</u> (continued)  |            |                            |                   |                    |                          |                     |
| Mercury, Total Recoverable   | µg/L       | 2.4                        |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Silver, Total Recoverable  | µg/L       | 7.0                        |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Silver, Dissolved  | µg/L       | *                          |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Nitrate  | mg/L       | *                          |                   | *                  | once/quarter*****        | grab                |
| Nitrite  | mg/L       | *                          |                   | *                  | once/quarter*****        | grab                |
| Zinc, Total Recoverable  | µg/L       | 371                        |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| Zinc, Dissolved  | µg/L       | *                          |                   | *                  | once/quarter*****        | 24 hr.<br>composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2002</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.  |            |                            |                   |                    |                          |                     |
| Whole Effluent Toxicity Test (WET)   | % Survival | See Special Conditions     |                   |                    | once/year<br>in July     | 24 hr.<br>composite |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2002</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.  |            |                            |                   |                    |                          |                     |
| <b>B. STANDARD CONDITIONS</b>  |            |                            |                   |                    |                          |                     |
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MO 780-0010 (8/91)

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)**

- \* Monitoring requirement only.
- \*\* Once each weekday means Monday, Tuesday, Wednesday, Thursday, and Friday.
- \*\*\* This facility is required to meet a removal efficiency of 85% or more.
- \*\*\*\* pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.
- \*\*\*\*\* Sample once per quarter in the months of March, June, September, and December.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    - (4) The level established in Part A of the permit by the Director.
  - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.
  6. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
    - (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
    - (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment lagoon during lagoon clean-out and maintenance activities. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

C. SPECIAL CONDITIONS (continued)

7. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
  - (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
  - (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
  - (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
  - (e) There shall be no significant human health hazard from incidental contact with the water;
  - (f) There shall be no acute toxicity to livestock or wildlife watering;
  - (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
  - (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
8. Whole Effluent Toxicity (WET) tests will be conducted as follows:

| SUMMARY OF WET TESTING FOR THIS PERMIT |          |           |                     |       |
|--|----------|-----------|---------------------|-------|
| OUTFALL                                | A.E.C. % | FREQUENCY | SAMPLE TYPE         | MONTH |
| #001                                   | 100%     | Annually  | 24 hr.<br>composite | July  |

a. Test Schedule and Follow-Up Requirements

- (1) Perform a single-dilution test in the months and at the frequency specified above.

If the test passes the effluent limit do not repeat test until the next test period. Submit results with the annual report.

If the test fails the effluent limit a multiple dilution test shall be performed within 30 days, and biweekly thereafter until one of the following conditions are met:

- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (2) The permittee shall submit a summary of all test results for the test series to the Planning Section of the WPCP, DNR, Box 176, Jefferson City, MO within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

C. SPECIAL CONDITIONS (continued)

8. Whole Effluent Toxicity (WET) (continued)

a. Test Schedule and Follow-Up Requirements (continued)

- (3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (4) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in part b.(1) will be required during this period.
- (5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of results.
- (6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

b. PASS/FAIL procedure and effluent limitations

- (1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.
- (2) To pass a multiple-dilution test:
  - (a) the computed percent effluent at the edge of the zone of initial dilution (AEC) must be less than three-tenths (0.3) of the  $LC_{50}$  concentration for the most sensitive of the test organisms, or,
  - (b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is considered an effluent limit violation.

c. Test Conditions

- (1) Test species: Ceriodaphnia dubia and fathead minnows, Pimephales promelas. Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.
- (2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
- (3) When dilutions are required, upstream receiving stream water will be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used. Procedures for generating reconstituted water will be supplied by the Department of Natural Resources (DNR).
- (4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after collection.

C. SPECIAL CONDITIONS (continued)

8. Whole Effluent Toxicity (WET) (continued)

c. Test Conditions (continued)

(5) Single-dilution tests will be run with:

- (a) Effluent at the AEC concentration;
- (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
- (c) reconstituted water.

(6) Multiple-dilution tests will be run with:

- (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC.
- (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
- (c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

9. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

10. Permittee shall submit to the Department on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:

- (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
- (b) A summary of the status of Industrial User compliance over the reporting period;
- (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
- (d) Any other relevant information requested by the Department.

11. As required in 40 CFR 122.21 (j)(4) the permittee shall, as part of its renewal application for this permit, submit to the department a written technical evaluation of the need to revise local limits under 40 CFR 403.5 (c)(1).

**SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS**

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless otherwise specified by MDNR, procedures should be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/600/4-90/027.

Test conditions for Ceriodaphnia dubia:

|                                  |   |
|----------------------------------|---|
| Test duration:                   | 48 h  |
| Temperature:                     | 25 ± 2°C  |
| Light Quality:                   | Ambient laboratory illumination   |
| Photoperiod:                     | 16 h light, 8 h dark  |
| Size of test vessel:             | 30 mL (minimum)   |
| Volume of test solution:         | 15 mL (minimum)   |
| Age of test organisms:           | <24 h old   |
| No. of animals/test vessel:      | 5   |
| No. of replicates/concentration: | 4   |
| No. of organisms/concentration:  | 20 (minimum)  |
| Feeding regime:                  | None (feed prior to test)   |
| Aeration:                        | None  |
| Dilution water:                  | Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness. |
| Endpoint:                        | Mortality (Statistically significant difference from upstream receiving water control at p# 0.05)     |
| Test acceptability criterion:    | 90% or greater survival in controls   |

Test conditions for (Pimephales promelas):

|                                  |   |
|----------------------------------|---|
| Test duration:                   | 48 h  |
| Temperature:                     | 25 ± 2°C  |
| Light Quality:                   | Ambient laboratory illumination   |
| Photoperiod:                     | 16 h light/ 8 h dark  |
| Size of test vessel:             | 250 mL (minimum)  |
| Volume of test solution:         | 200 mL (minimum)  |
| Age of test organisms:           | 1-14 days (all same age)  |
| No. of animals/test vessel:      | 10  |
| No. of replicates/concentration: | 4 (minimum) single dilution method<br>2 (minimum) multiple dilution method                            |
| No. of organisms/concentration:  | 40 (minimum) single dilution method<br>20 (minimum) multiple dilution method                          |
| Feeding regime:                  | None (feed prior to test)   |
| Aeration:                        | None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.           |
| Dilution water:                  | Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness. |
| Endpoint:                        | Mortality (Statistically significant difference from upstream receiving water control at p# 0.05)     |
| Test Acceptability criterion:    | 90% or greater survival in controls   |



Date of Fact Sheet: July 23, 1999

Date of Public Notice: June 9, 2000

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT  
FACT SHEET

This Fact Sheet explains the applicable regulations, rationale for development of this permit and the public participation process.

NPDES PERMIT NUMBER: MO-0099465

FACILITY NAME: St. Clair Wastewater Treatment Facility

OWNER NAME: City of St. Clair

LOCATION: SE of SW Sec. 23 T42N R1W County: Franklin

RECEIVING STREAM: Happy Sock Creek

FACILITY CONTACT PERSON: Mike Drennan

TELEPHONE: (636) 629-3392

FACILITY DESCRIPTION AND RATIONALE

Outfall #001 - POTW - SIC #4952

Lift station/oxidation ditch/sludge drying beds/sludge holding tank/Sludge is land applied.

Design population equivalent is 5300.

Actual flow is 0.530 MGD.

Design flow is 0.763 MGD.

Design sludge production is 81.6 dry tons/year.

Construction of oxidation ditch to match existing with two brush aerators, new brush aerators for existing oxidation ditch, one new clarifier, two new sludge holding basins, sludge processing building with a new belt filter press and a new dry sludge hauling vehicle. Two flows combined into one outfall. Sludge drying beds will be eliminated. Sludge will still be land applied. The anticipated date of completion to construction is December, 2000.

This permit will be issued for a period of five years.

# WATER QUALITY REVIEW SHEET

FACILITY: City of St. Clair

NPDES #: MO-0099465

EFFLUENT FLOW: proposed design flow -- 1.0 MGD (after construction is completed).

## RECEIVING STREAM CLASSIFICATION:

Happy Sock Creek-- unclassified

Bourbeuse River-- Class P (permanent flow)

## RECEIVING STREAM USES:

Happy Sock Creek-- no designated uses

Bourbeuse River -- aquatic-life protection (general warm-water fishery); cool-water fishery; irrigation; boating; whole-body contact recreation; drinking-water supply.

CURRENT CONDITONS: Current effluent limits are standard "30/30"-mg/L for BOD and TSS, from the effluent regulation 10 CSR 20-7.015. The last survey downstream of the STP in 1992 indicated about 1.4 miles of effect, with 0.1 mile more severely polluted by sludge and turbidity. Self-monitoring reports indicate BOD and TSS consistently less than 15 mg/l, within permit limits. However, the plant is at capacity and needs to be expanded to serve additional areas, as well as properly handle wet-weather flows.

METALS: The current permit has a "monitoring only" requirement for metals. The immediate receiving stream is not classified for permanent aquatic life, but should be protected against acute toxicity. Pretreatment should assure that effluent limits below are met.

- 7Q10 low flow in Bourbeuse at Union = 18 cfs
- 25% (mixing zone) x 18 cfs = 4.5 cfs' flow for dilution
- proposed design effluent flow is 1.0 MGD = 1.5 cfs

1.5 cfs' effluent flow in 4.5 cfs' mixing zone = 3 times dilution.

The more stringent of (1) chronic metals' criteria multiplied by 3 for protection of the Bourbeuse River, or (2) the acute criteria for protection on the immediate receiving stream, would be appropriate.

| <u>chronic</u><br><u>criteria</u> |      | <u>effluent limits</u><br><u>(ug/l)</u> |           |
|-----------------------------------|------|---|-----------|
| Cd -                              | 11.8 | 36                                      | (acute)   |
| Cr -                              | 42   | 62                                      | (acute)   |
| Cu -                              | 28   | 43                                      | (acute)   |
| Pb -                              | 16   | 48                                      | (chronic) |
| Ni -                              | 500  | 1500                                    | (chronic) |
| Zn -                              | 340  | 371                                     | (acute)   |
| Ag -                              |      | 7                                       | (acute)   |
| CN -                              | 5    | 22                                      | (acute)   |
| As -                              | 20   | 60                                      | (chronic) |
| Hg -                              | 0.5  | 2.4                                     | (acute)   |

Metals' limits should be established if there is reasonable potential for exceeding the above values; otherwise "monitoring only" should be continued.

DISINFECTION: No effluent disinfection is required, as the flow distance is >2.5 miles to the Bourbeuse River, a recreational stream.

WHOLE-EFFLUENT TOXICITY TEST: An annual WET test should be conducted with acceptable effluent concentration (AEC) of 100% effluent.

BOD/TSS -- 30 mg/l (monthly average) (no dissolved-oxygen impact expected on Bourbeuse River from this effluent-based BOD limit)  
NH3-N -- effluent monitoring only  
DISINFECTION - not required  
METALS -- As given above, if there is reasonable potential for exceedence  
NUTRIENTS -- Effluent monitoring for total P and NO2+NO3-N is recommended for major discharges, to help determine total basin-wide point-source loading  
OIL AND GREASE: The current limits of "10/15" mg/l (monthly average/daily maximum) should be continued

REVIEWER: RG

DATE: 6-14-99

SECTION CHIEF: JM